



Lower Mystic Regional Working Group Scope of Work

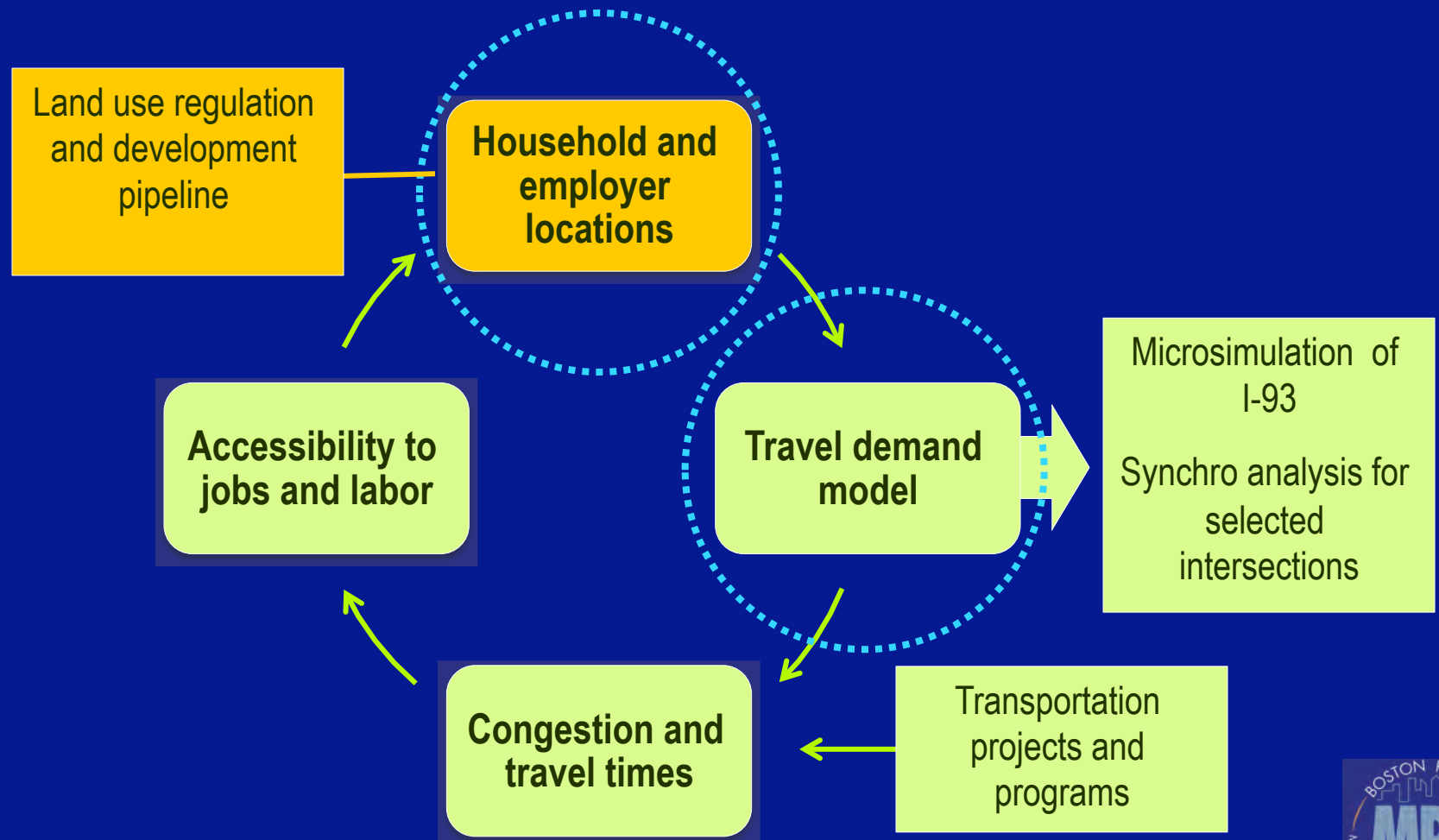
April 11, 2016

**Central Transportation Planning Staff
and
Metropolitan Area Planning Council**

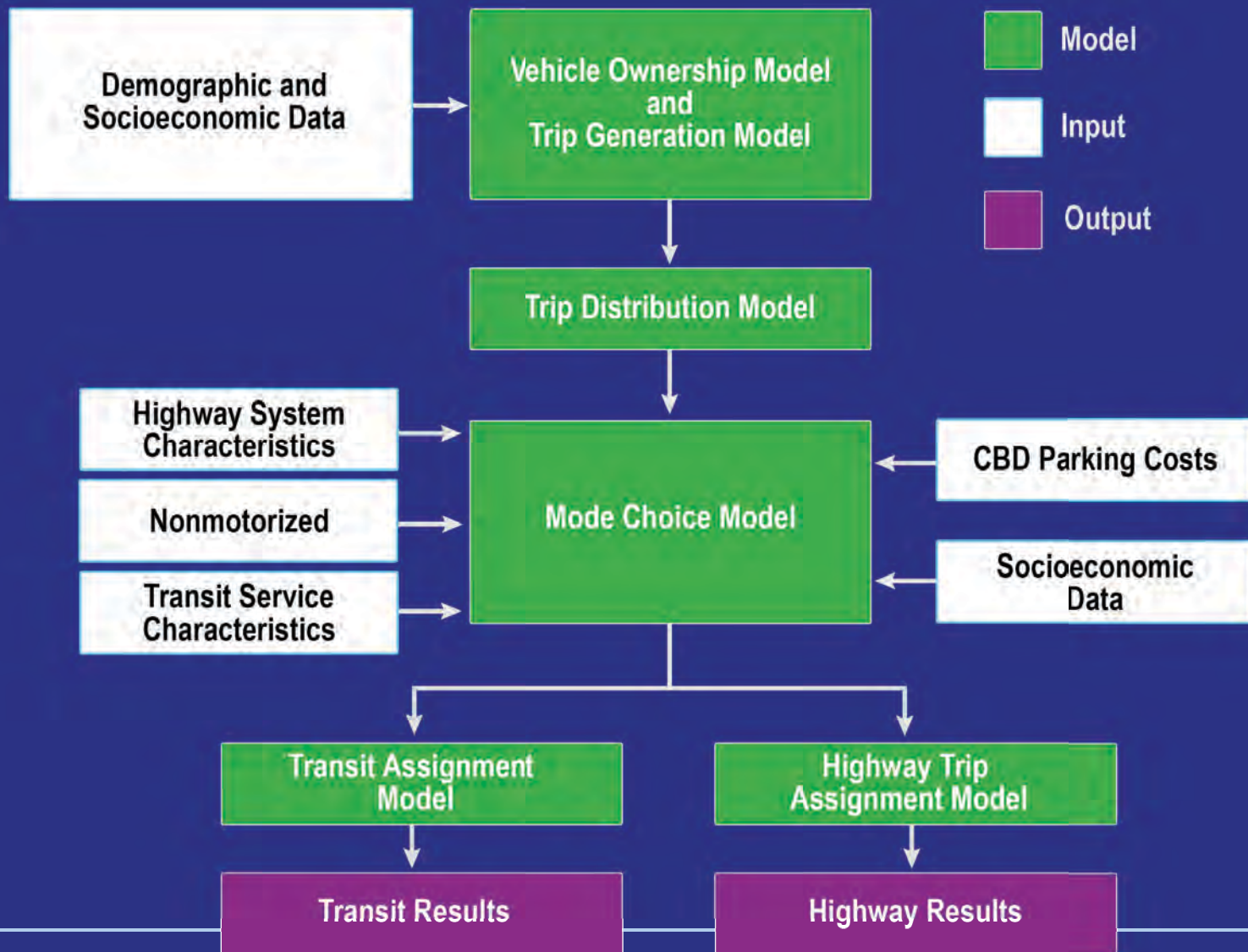
Key Topics and Questions

- Overview of the travel demand model
- What are the model inputs and outputs?
- The no-build scenario
- Mitigation strategies?

Transportation and Land Use Modeling



Travel Demand Model (TDM)



Model Inputs

Themes

- Costs of travel
- Roadway characteristics
- Transit characteristics
- Demographics and land use

Model Inputs (cont.)

Costs of Travel

- Fares
- Tolls
- Parking costs
- Auto operating costs
- Value of time



Model Inputs (cont.)

Roadway Characteristics

- Roadway speeds and travel times
- Roadway capacity
- Turning lanes
- Signal timings
- HOT/HOV Lanes
- Truck restrictions
- New roads, lanes, and connections



Model Inputs (cont.)

Transit Characteristics

- Alignment
- Frequencies
- Wait times
- Stations
- Park-and-ride lots
- Travel times (used to examine signal priorities)



Model Inputs (cont.)

Demographics and Land Use (by TAZ)

- Auto ownership
- Households
- Population (by age cohort)
- Employment (Service, Retail, and Basic)
- Pedestrian environment variable



Model Output

Themes

- Revenue
- Trip activity
- Roadway activity
- Transit activity
- Air quality
- Environmental justice analysis



Model Output (cont.)

Revenue

- Fare revenue by transit agency
- Park-and-ride-lot fees
- Toll revenue



Model Output (cont.)

Trip Activity

- Trip ends by TAZ
- Changes to trip flows due to changes in accessibility (distribution patterns)
- Trip length
- Mode shares
- Travel time by mode and component
- Logan passenger and employee trips

Model Output (cont.)

Roadway Activity

- Roadway volumes by time period
- Average speeds (congested or free-flow)
- Levels of congestion (v/c)
- Vehicle-miles of travel (VMT)
- Vehicle-hours of travel (VHT)
- Level of service
- Delay



Model Output (cont.)

Transit Activity

- Ridership by line and boardings and alightings by time period
- Passenger miles
- Passenger hours
- Transfer rate
- Mode of access
- Fare and parking revenue



Model Output (cont.)

- Air quality by pollutant
 - carbon dioxide (CO₂), carbon monoxide (CO), volatile organic compounds (VOC), nitrous oxide (NO_x), and particulate matter (PM)
- Environmental Justice
 - Accessibility
 - Mobility

No-Build Scenario

What is the no-build scenario?

How is the no-build scenario developed?

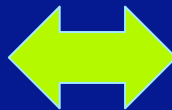
- **Consistent with the long range transportation plan land use assumptions**
 - **Consistent with the long range transportation plan project list**
 - **Consistent with the transportation improvement plan project list**
 - **Consistent with Wynn Section 61 findings**
-

How is the No-Build Used

2 Forecast Years

12 Alternatives

2030 No-Build

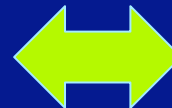


2030 Alternatives

- Infrastructure
- Policies
- Technology
- Land Use



2040 No-Build



2040 Preferred Alternatives

Mitigation Strategies for Building the Alternatives

- Infrastructure improvements (roadway, transit, and nonmotorized connections)
- Intelligent transportation systems (ITS)
- Transportation demand management (TDM)
- Land use policies: parking policies, density and allowable uses, housing types, and urban form

Thank You!

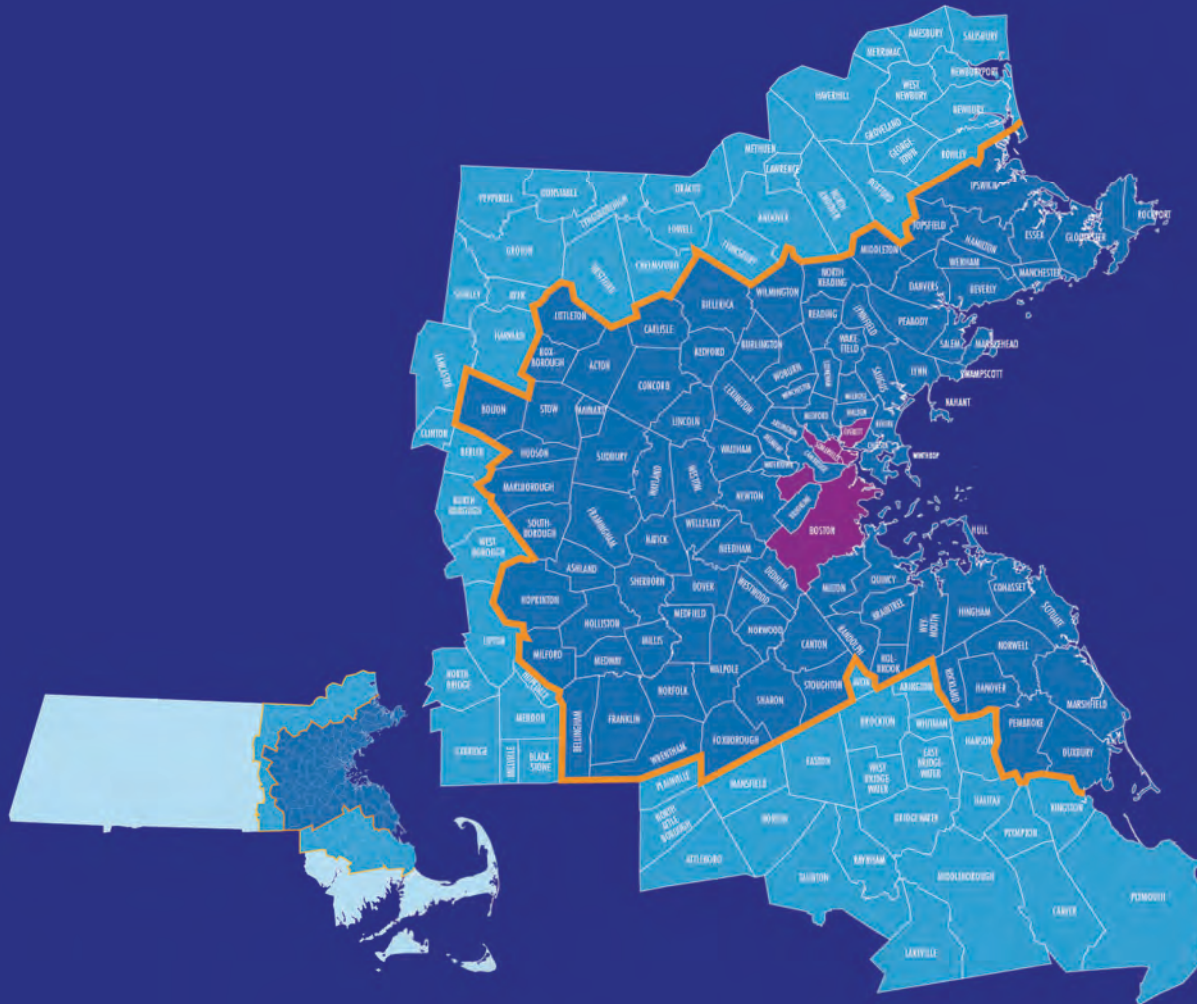
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Study Area



Transportation Analysis Zones

